if the conductivity from the first conductivity sensor differs more than a threshold amount from the conductivity of the second conductivity sensor, indicating a fault condition.

2. The method of claim **1**, further comprising the first conductivity sensor determining that the conductivity of product water is not within a first acceptable range and opening the divert valve and maintaining the first product valve and second product valve in a closed position.

3. The method of claim **1**, further comprising the first conductivity sensor determining that the conductivity of product water is within an acceptable range and opening the first product valve and the second product valve.

4. The method of claim **1**, further comprising the second conductivity sensor determining the conductivity of the product water and the controller indicating a fault condition when the second conductivity sensor determining that the conductivity of product water is not within a second acceptable range.

5. The method of claim **4**, further comprising wherein the first acceptable range is lower than the second acceptable range.

6. The method of claim **1**, further comprising comparing the conductivity from the first conductivity sensor and the second conductivity sensor, and if the conductivity from the first conductivity sensor differs more than a threshold amount from the conductivity of the second conductivity sensor, indicating a fault condition.

7. The method of claim **1**, further comprising:

determining that either the first conductivity sensor reading or the second conductivity sensor reading is not within the acceptable range, or threshold range for acceptability; and

indicating a fault condition.

8. The method of claim **1**, further comprising wherein the first conductivity sensor and the second conductivity sensor comprising:

three probes connected by a cable, at least one of the three probes comprising a temperature sensor and wherein the resistance between each of the three probes is 500 k Ohms.

9. The method of claim **1**, further comprising:

opening a divert valve;

receiving a reading from the second conductivity sensor; and\

indicating a fault condition.

10. The method of claim **1**, further comprising a flow meter downstream from the first product valve and upstream from the second product valve.

11. A method for determining the quality of product water output comprising:

providing a controller;

providing a first conductivity sensor in communication with the controller;

providing a second conductivity sensor in communication with the controller;

the controller comparing the conductivity from the first conductivity sensor and the second conductivity sensor; and

if the conductivity from the first conductivity sensor differs more than a threshold amount from the conductivity of the second conductivity sensor, indicating a fault condition.

12. The method of claim **11**, further comprising providing a first product valve downstream from the first conductivity sensor and in communication with the controller.

13. The method of claim **12**, further comprising providing a second product valve downstream from the first product valve and in communication with the controller.

14. The method of claim **13**, wherein the second conductivity sensor downstream from the second product valve.

15. The method of claim **14**, further comprising providing a divert valve downstream from the first conductivity sensor and upstream from the first product valve and in communication with the controller.

16. The method of claim **15**, further comprising the first conductivity sensor determining that the conductivity of product water is not within a first acceptable range and opening the divert valve and maintaining the first product valve and second product valve in a closed position.

17. The method of claim **11**, further comprising a first conductivity sensor determining that the conductivity of product water is within an acceptable range and opening a first product valve and a second product valve.

18. The method of claim **11**, further comprising a second conductivity sensor determining the conductivity of the product water and the controller indicating a fault condition when the second conductivity sensor determining that the conductivity of product water is not within a second acceptable range.

19. The method of claim **11**, further comprising comparing the conductivity from the first conductivity sensor and the second conductivity sensor, and if the conductivity from the first conductivity sensor differs more than a threshold amount from the conductivity of the second conductivity sensor, indicating a fault condition.

20. The method of claim **11**, further comprising:

determining that either the first conductivity sensor reading or the second conductivity sensor reading is not within the acceptable range, or threshold range for acceptability; and

indicating a fault condition.

21. The method of claim **11**, further comprising wherein the first conductivity sensor and the second conductivity sensor comprising:

three probes connected by a cable, at least one of the three probes comprising a temperature sensor and wherein the resistance between each of the three probes is 500 k Ohms.

22. The method of claim **11**, further comprising:

opening a divert valve;

receiving a reading from the second conductivity sensor; and

indicating a fault condition.

23. The method of claim **11**, further comprising a flow meter downstream from the first product valve and upstream from the second product valve.

* * * * *